

HERNIA OF THE APPENDIX, COMPLICATED WITH APPENDICITIS.*

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NOTWITHSTANDING the subject of this communication is of but minor importance, the comparative infrequency of hernia of the processus vermiformis ought to justify the report of every case encountered.

It may be argued from the practical standpoint that it is of no importance to the surgeon or the patient to know beforehand what is contained in the sac of a hernia, that the operation is the same no matter what the condition. This is to be granted if we allow that the office of the surgeon has no aim beyond the ability to do an operation and dispose of the ordinary complications to be dealt with. But, as the principles of medicine are being more and more crystalized into a science, diagnosis naturally assumes a higher place in the mind of the surgeon, besides the world has always expected us to understand things which we undertake.

The diagnosis of hernia of the appendix will always be surrounded by difficulties, but bearing in mind that such a thing is possible and having a knowledge of the phenomena attending the condition, it will in most instances be possible to make a probable diagnosis.

When the processus vermiformis is inflamed in the sac of a hernia the clinical picture is that of strangulated enterocele minus the obstruction that usually attends the latter. In differentiating hernia of the appendix with inflammation from strangulated enterocele, it is well to remember that in the former the symptomatic syndrome is that of an inflammatory condition while the phenomena of obstruction predominates in

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the latter. Levy lays stress upon pain felt about the umbilicus. In my own case there was great pain in the right iliac region. The form of the sac is alantoid, excepting when the appendix enters the canal doubled upon itself. An epiplocele may have the same appearance but is usually not so distinctly fusiform. The appendix in the hernial sac may be mistaken for an inflamed gland. The percussion note in both omentocoele and hernia of the processus vermiformis is dull. No age is exempt from hernia of the appendix vermiformis, but it has been observed far more frequently in the aged and more often in the male sex. The appendix has been found more often in right inguinal than in crural hernia. This probably accounts for its greater frequency in the male sex. It has been found in left-sided hernia. The appendix may occupy the sac of congenital as well as that of acquired hernia.

Levy has raised the question as to whether inflammation of the epityphlon is the result of incarceration or whether the incarceration is due to inflammation and consequent swelling of the organ. He inclines to the belief that inflammation precedes incarceration.

It is said that an attack of epityphilitis predisposes to hernia of the appendix. The causes of appendicitis in the herniated organ are the same as the causes for inflammation in the organ *in situ naturalis*. It must be remembered, however, that trauma is infinitely more frequent in the herniated than in the appendix in its normal situation. As before stated, by far the greater number of cases of inflammation of the herniated appendix occur in aged patients. Levy accounts for this on the hypothesis that rheumatism predisposes to the formation of calculi and that diminished peristalsis in the aged prevents the appendix from emptying itself as rapidly as in youthful patients. This authority gives the causes of inflammation of the herniated appendix as traumatism, concretions, foreign bodies and digestive disturbances.

Perityphlitis may give rise to a serous effusion into the sac. Grave cases may be complicated with peritonitis or even

phlegmon. Perforation is frequent. According to Levy, one of the capital symptoms of appendicitis in the sac of a hernia is pain of a sticking and paroxysmal character always felt with greatest force in the same place. Sometimes there is a radiating pain directed from the inner inguinal opening toward the abdominal cavity. The tumor enlarges rapidly. Sometimes there is crepitation. The general manifestations are acceleration of the pulse and sometimes vomiting with elevation of the temperature. In the gangrenous form the temperature may be low. Levy makes the statement that vomiting is more frequent in simple incarceration of the appendix than in appendicitis. Peritonitis beginning in the herniated appendix may rapidly become phlegmonous.

In the differential diagnosis simple incarcerated hernia is first to be excluded. In epityphilitis hernialis as contrasted with strangulated enterocele the inflammatory phenomena predominate. Vomiting is less frequent and obstruction of the bowel is not often present, while the general appearance of the patient is not so grave. The diagnosis is always beset with uncertainties. Bichat observed the possibility of suppurative infection spreading from the epityphlon *in situ normalis* to the hernial sac and vice versa from the hernial sac to the general peritoneum. Bichat reports a case of his own and cites another from Körte in support of this statement.

Hydrocele may exist with hernia of the appendix and perforce with appendicitis hernialis. The wearing of a truss over a herniated appendix is fraught with dangerous consequences. Taxis is to be avoided under all circumstances.

Levy observes that the operation is to be determined altogether by the condition in which the appendix is found upon opening the sac. The appendix must be liberally exposed and resected if possible and the wound closed so as to cure the hernia. In the presence of phlegmon or suppuration this cannot be done any more than we would close the abdomen after an operation for suppurative appendicitis. In the presence of phlegmon or suppuration

in the hernial sac drainage must be employed. If an active phlegmon is encountered Levy counsels splitting the appendix and drainage until the sloughing and infection subside when the clean radical operation is done. Jonathan Hutchinson, Jr., who wrote upon this subject in the *British Medical Journal*, Oct. 21, 1899, holds about the same opinion.

One of the latest studies of this subject is the thesis of Jacquemin at Paris, 1905. He does not confine his reports to cases of hernia of the appendix alone, but includes all cases of hernia in which the appendix is present. This authority looks upon strangulation of the appendix as being very rare, excepting where the organ has prolapsed into the canal doubled upon itself. He agrees with all other authorities regarding the influence of old age on hernia of the appendix, but admits that no age is exempt from the accident. He mentions the fact that a hernia with painful crises or one with an unusual history ought to be suspected as containing an appendix. He calls attention to Demoulin's two cases of hernia of the appendix complicated with sacculated cysts, giving to the case the aspect of hydrocele of the cord. He likens appendicitis herniaria to appendicitis in other unusual locations. The difficulty of diagnosis is increased because appendicitis in a hernia is not very different from what sometimes takes place in an ordinary hernia strangulated or inflamed. He regards the prognosis as good excepting in neglected cases. Jacquemin tabulates fifty-eight cases with six deaths, most of which were due to procrastination. He shows how the attendant may be misled by the insidiousness of the onset and the simulation of the disease to epiploitis.

John G. Sheldon published a paper on this subject with report of a case in *American Medicine*, 1903.

Bull and Coley observed the appendix in right inguinal hernia sixteen times in a thousand cases.

R. Peterson found the condition twice in ninety right hernias.

Hutchinson is responsible for the statement that an attack

of appendicitis predisposes to hernia of the appendix. He describes certain changes in the organ due to inflammation that facilitated its entrance into the inguinal canal. He states that a hernia containing an appendix is usually irreducible and tender on deep pressure. If the appendix is found in a normal condition at the operation he advises returning it to the abdominal cavity.

REPORT OF CASE.—H. W., German farmer, living near Yates Center, Kas.; he had been the subject of an inguinal hernia of the right side for several years. The hernia had often been painful. He had worn a truss. He was referred to me for operation by Dr. Maxon, of Toronto, Kas., August 17, 1907. He entered St. Francis Hospital the same day. According to the statement of the patient he had felt ill eight days before and had called a physician on the fifth day previous. This physician employed taxis persistently, and failing to reduce the hernia, told him to remain in bed and employ liniments. Three days later, feeling much worse, he summoned Dr. Maxon who recognized the condition and advised operation. The operation was done on the evening of the seventeenth day of August, the same day of admission to the hospital and the eighth day after the attack.

Inspection revealed a sausage-shaped mass in the right inguinal region extending from the external ring to the testes in the scrotum. Palpation showed the mass to be smooth, hard and tender on pressure. The tenderness extended to the right iliac fossa. The patient looked sick and was hiccupping slightly. The bowels were not obstructed. An incision was made over the tumor, the upper and outer limb of which corresponded to the Bassini incision for hernia, and the lower part was extended over the cord into the scrotum. Upon opening the sac a small quantity of foul-smelling fluid escaped. The appendix, enormously enlarged and discolored and adherent constituted the contents of the sac. The walls of the sac were very much thickened and adherent to the cord and the testicle. Upon dissecting up the appendix the head of the caecum and the ilio-caecal junction formed an infundibuliform projection into the upper part of the canal so that the entire processus vermiformis lay in the sac.

The caecum and ilium were adherent about the entrance to the canal. The appendix was resected close up to the caecum and the sac of the hernia dissected away. As much of the wound as possible was closed, as in the Bassini operation, but, deeming it absolutely necessary to employ drainage, a cigarette the size of the little finger was carried down to the stump of the appendix, thereby making the closure of this part of the wound defective. The drainage was removed entirely at the end of a week and the wound healed.

J. M. ELDER, in the *Montreal Medical Journal* of March, 1901, reports a case of appendicitis herniaria with perforation, in an infant seven months old, operated, with recovery.

BAILLET, of Orleans, France, *Revue de Chirurgie*, page 294, 1904, reports the case of an infant of thirteen months on which he operated for appendicitis herniaria with satisfactory result.

LEURET reports a case of appendicitis in the sac of a hernia in a child of three years.

BARTH, cited in *Jahresbericht*, 1902, page 811, reports the case of a woman of eighty years whom he operated upon for gangrenous appendicitis in the sac of a hernia eight days after the onset of the disease.

FRÄNKELS, *Jahresbericht*, 1902, page 811, reports a case of herniated processus vermiformis in which the organ contained a fish-bone penetrating the mucosa. Estienny, in the same volume and page, reports a case. Dutoit, on page 811, *Jahresbericht*, 1902, reports the case of a woman of fifty-two years with partial obstruction and gangrenous appendix, with rupture in the hernial sac.

SOULIGOUX, *Jahresbericht*, 1902, reports a case of appendicitis in congenital hernia with a knuckle of bowel.

RUTHERFORD reports a case of a woman of seventy-nine with appendicitis in a crural hernia.

GALTEN reports a case of appendicitis in the canal of a hernia.

KÖLLIKER reports a case of a sixty-nine year old woman with appendicitis herniaria, *Jahresbericht*, 1902, page 807.

MOUCHET, *Jahresbericht*, 1901, page 623, reports a case where an old hernia manifested signs of strangulation which was found to be due to an inflamed appendix present in the sac.

GOEBEL, *Jahresbericht*, 1901, page 623, found a perforated appendix in the sac of an hernia.

STECCHI, *Supplemento Al Policlinico*, April 14, 1900, reports a case of appendicitis herniaria.

CALVINI, *Clinica Chirurgica*, 1902, No. 1, reports a case with operation and recovery.

COMINACINA, *Supplemento Al Policlinico*, 1902, No. 34, reports a case of appendicitis herniaria with peritonitis-operation and recovery.

WULFF, page 757, Jahresbericht, 1902, reports a case of appendicitis herniare. Mires on the same page reports a case, while two cases are reported by Condamin. Racovicicano reports the case of a man of sixty-five with suppurative orchitis with appendicitis in the hernial sac. Quenu, Jahresbericht, 1905, page 599, reports the case of a woman of forty-two in which the appendix was strangulated in a hernia. The portion of the appendix distal to the strangulation was in a state of inflammation: operation and recovery. Bichat reports a case cited on the same page with fatal termination. I do not believe any of these cases were included in the 116 tabulated by Bajardi and Briancon.